

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Previously Presented): A sintered soft magnetic element, comprising: Fe-based sintered alloy soft magnetic material of metallic glass, the sintered soft magnetic element being prepared by sintering, in a temperature range of 573 K to the crystallization temperature (T_x), spherical particles of Fe-based metallic glass alloy prepared by an atomizing process, the spherical particles having a particle size of 30 to 125 μm ; a composition consisting of, by atomic %, 0.5 to 10 % of Ga, 7 to 15 % of P, 3 to 7 % of C, 3 to 7 % of B and 1 to 7 % of Si, with the remainder being Fe, the Fe-based metallic glass alloy having a crystallization temperature (T_x) of 770 to 800 K and a liquidus temperature (T_l) of 1220 to 1300 K,

wherein the Fe-based sintered alloy soft magnetic material has metallic glass phase of high-density with a relative density of 99.0 % or more, a magnetic permeability of 3900 (μmax) or more, a coercive force (H_c) of 19 (A/m) or less and a specific resistance of 1.6 $\mu\Omega\text{m}$ or more in an as-sintered state,

wherein the Fe-based sintered alloy soft magnetic material has a temperature interval of a supercooled liquid region (ΔT_x) of 25 K or more, as expressed by a formula: $\Delta T_x = T_x - T_g$, wherein T_x is a crystallization temperature, and T_g is a glass transition temperature; and a reduced glass transition temperature of 0.59 or more, as expressed by a formula: T_g/T_l , wherein T_g is a glass transition temperature, and T_l is a liquidus temperature.

2. (Canceled).

3. (Previously Presented): A sintered soft magnetic element as defined in claim 1 sintering is performed in a temperature range of 573 to 723 K, wherein the Fe-based sintered alloy soft magnetic material has a magnetic permeability of 7000 (μ max) or more and a coercive force (H_c) of 12 (A/m) or less.

4-6. (Cancelled).

7. (Previously Presented): A sintered soft magnetic element, comprising: sintered metallic glass particles of a composition consisting of, by atomic %, 0.5 to 10 % of Ga, 7 to 15 % of P, 3 to 7 % of C, 3 to 7 % of B and 1 to 7 % of Si, with the remainder being Fe, said metallic glass particles having maximum particle size of 30 to 125 μ m,

wherein the Fe-based alloy soft magnetic material has metallic glass phase of high-density with a relative density of 99.0 % or more, a magnetic permeability of 3900 (μ max) or more, a coercive force (H_c) of 19 (A/m) or less and a specific resistance of 1.6 $\mu\Omega$ m or more in an as-sintered state,

wherein the Fe-based alloy soft magnetic material has a temperature interval of a supercooled liquid region (ΔT_x) of 25 K or more, as expressed by a formula: $\Delta T_x = T_x - T_g$, wherein T_x is a crystallization temperature, and T_g is a glass transition temperature; and a

reduced glass transition temperature of 0.59 or more, as expressed by a formula: T_g/T_l , wherein T_g is a glass transition temperature, and T_l is a liquidus temperature.

8. (Previously Presented): A sintered soft magnetic element as defined in claim 1, wherein the Fe-based sintered alloy soft magnetic material has a magnetic permeability of 7000 (μ_{max}) or more and a coercive force (H_c) of 12 (A/m) or less.